End of Result Set

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L2: Entry 1 of 1   File: USPT   Jan 28, 2003

DOCUMENT-IDENTIFIER: US 6513109 B1
TITLE: Method and apparatus for implementing execution predicates in a computer processing system

Detailed Description Text (14):
The instruction buffer 325 copies the instructions to the dispatch unit 330, which performs the following multiple tasks: 1. The dispatch unit 330 decodes each instruction. 2. The dispatch unit 330 renames the destination operand specifier (s) in each instruction, in which the architected destination register operand specifiers are mapped to distinct physical register specifiers in the processor. The physical register specifiers specify the registers in the future register file 335 and architected register file 360. The dispatch unit 330 also updates relevant tables associated with the register rename logic (not shown). 3. The dispatch unit 330 queries the architected register file 360, and the future register file 335, in that order, for the availability of any source operands of the type general-register, floating-point register, condition register, or any other register type. If any of the operands are currently available in the architected register file 360, their values are copied along with the instruction. If the value of the operand is not currently available (because it is being computed by an earlier instruction), then the architected register file 360 stores an indication to that effect, upon which the future register file 335 is queried for this value using the physical register name (which is also available from the architected register file 360) where the value was to be available. If the value is found, then the value is copied along with the instruction. If the value is not found, then the physical register name where the value is to become available in the future is copied. 4. The dispatch unit 330 dispatches the instructions for execution to the following execution units: the branch unit 340; the functional units 345; and the memory units 350. The decision as to which instruction will enter a Reservation Station (not shown) (organized as a queue) for execution is made based on the execution resource requirements of the instruction and the availability of the execution units.

Detailed Description Text (15):
Once all the source operand values necessary for the execution of an instruction are available, the instruction executes in the execution units and the result value is computed. The computed values are written to the retirement queue 355 entry for the instruction (further described below), and any instructions waiting in the reservation stations for the values are marked as ready for execution.